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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,270	08/22/2003	Rong-Tsun Wu	SIPT121648	9640

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CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC
1420 FIFTH AVENUE
SUITE 2800
SEATTLE, WA 98101-2347

EXAMINER	
FLOOD, MICHELE C	
ART UNIT	**PAPER NUMBER**
1655	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,270	WU, RONG-TSUN	
	Examiner	Art Unit	
	Michele Flood	1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *5 and 7-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/6/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, Claims 1-11, as well as the species election of liver cirrhosis, in the reply filed on February 2, 2007 is acknowledged. Further acknowledgment is made of Applicant's indication that the elected invention reads of Claims 1-4 and 6.

The claims have been examined insofar as they read on the elected invention.

Claims 1-4 and 6 are under examination.

Specification

The disclosure is objected to because numerous abbreviations appear throughout the text of the specification. For example, page 9, line 7, recites the abbreviation "HPLC"; page 9, line 10, recites the abbreviation "DMN"; page 9, line 16, recites the abbreviation "PBS"; and, page 9, line 24, recites the abbreviation "PoMuMPh". Abbreviations in the first instance of claims should be expanded upon with the abbreviation indicated in parentheses. The abbreviations can be used thereafter. Applicant is advised to carefully review each page of the specification since the cited examples are only a few of many abbreviations found throughout the text of the specification. Correction is required. See MPEP § 608.01(b).

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show a "red line" or a "blue line" or a "green line" as described in the specification, on page 9, lines 7-9. Moreover, the x axis and y axis are not labeled in Figure 1. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "a resultant product from step (b)" in 8. There is a lack of clear antecedent basis for this limitation in the claim.

Abbreviations in the first instance of claims should be expanded upon with the abbreviation indicated in parentheses. The abbreviations can be used thereafter. Claim 2 recites the abbreviation HPLC. Applicant may overcome the rejection by replacing the abbreviation with high performance liquid chromatograph (HPLC).

All other cited claims depend directly or indirectly from rejected claims and are, therefore, also, rejected under U.S.C. 112, second paragraph for the reasons set forth above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b or e) as being anticipated by Ravagnan et al. (N or O or A*).

Applicant claims an extract product from the root of *Polygonum multiflorum* Thunb., which is prepared from a process comprising the steps of: (a) subjecting a suitable amount of a starting root material of *Polygonum multiflorum* Thunb. to a freezing treatment for a period of time; (b) subjecting a frozen product obtained in step (a) to an extraction treatment with methanol; (c) subjecting a methanol product from step (b) to a separating treatment to obtain a methanol solution free of extracted root debris of the starting root material of *Polygonum multiflorum* Thunb.; and (d) removing methanol from the methanol solution obtained in step (c) to obtain a methanol-extracted product. Applicant further claims an extract product from the root of *Polygonum multiflorum* Thunb. according to claim 1, wherein the product has a reverse phase-HPLC elution profile as shown in Figure 1. Applicant further claims an extract for the

root of *Polygonum multiflorum* Thunb. according to claim 1, wherein in step (a) of the process, the starting root material of *Polygonum multiflorum* Thunb. to be used therein is a processed form of *Polygonum multiflorum* Thunb. root. Applicant further claims a pharmaceutical comprising an extract product from the root of *Polygonum multiflorum* Thunb., as defined in claim 1. Applicant further claims a pharmaceutical composition for treating a subject afflicted with a liver disease selected from liver dysfunction, liver fibrosis and liver cirrhosis comprising a therapeutically effective amount of an extract product from the root of *Polygonum multiflorum* Thunb., as defined in claim 1.

Ravagnan teaches an extract product having pharmacological activity obtained by the claim-designated process steps. The process of making the extract product taught by Ravagnan is useful in making a pharmaceutical composition comprising a complex mixture of cis-resveratrol and of hydroxylated stilbenes, oligostilbenes and stilbenoids both in their free and glucosidated forms from spermatophyte plants. For instance, Ravagnan teaches lyophilizing or freezing an appropriate amount of root from a plant belonging to Polygonaceae, including *Polygonum multiflorum* Thunb.; grinding the lyophilized root material; extracting the ground, lyophilized root material with methanol; centrifuging the extract; recovering a supernatant liquor, which is recovered and concentrated under reduced pressure and low temperature and taken up with ethyl acetate to obtain an extract product having pharmacological activity and a pharmaceutical composition thereof. *See* patent claims.

Ravagnan does not expressly teach that the referenced extract product extracted by the claim-designated process steps as a pharmaceutical composition for treating a

subject afflicted with liver disease, such as liver cirrhosis. The prior art composition is also not taught as having a reverse phase-HPLC elution profile as shown in Figure 1. However, the prior art extract product and the pharmaceutical composition are prepared using the same plant, the same plant material, the same solvents, and the same process steps disclosed by Applicant for making a composition for treating liver cirrhosis. Therefore, the claim-designated beneficial functional effect for treating liver cirrhosis, as well as an extract product from the root of *Polygonum multiflorum* Thunb. according to claim 1 having a reverse-phase HPLC elution profile as shown in Figure 1 are deemed inherent to the composition taught by Ravagnan, absent evidence to the contrary. Moreover, it should be noted that Claim 1 constitutes a Product-by-Process type claim. In Product-by-Process type claims, the process of producing the product is given no patentable weight since it does not impart novelty to a product when the product is taught by the prior art. See *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi,* 218 USPQ 289, 292-293 (CAFC 1983) and *In re Brown,* 173 USPQ 685 (CCPA 1972). Consequently, even if a particular process used to prepare a product is novel and unobvious over the prior art, the product *per se*, even when limited to the particular process, is unpatentable over the same product taught in by the prior art.

The references anticipate the claimed subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ravagnan et al. (N or O or A*).

Applicant's claimed invention was set forth above.

The teachings of Ravagnan are set forth above.

The claims are drawn to a product-by-process obtained from the roots of *Polygonum multiflorum* Thunb. The claims are further drawn to product-by-process having a reverse phase-HPLC elution profile as shown in Figure 1.

Ravagnan teaches a method of preparing an extract product and a pharmaceutical composition thereof from the root of *Polygonum multiflorum* Thunb. comprising the steps of: lyophilizing or freezing an appropriate amount of root from a plant belonging to Polygonaceae, including *Polygonum multiflorum* Thunb.; grinding the lyophilized root material; extracting the ground, lyophilized root material with methanol; centrifuging the extract; recovering a supernatant liquor, which is recovered and concentrated under reduced pressure and low temperature and taken up with ethyl acetate. The prior art composition is not taught as a pharmaceutical composition for treating a subject afflicted with liver cirrhosis. The prior art composition is also not taught as having a reverse phase-HPLC elution profile as shown in Figure 1. However, Ravagnan does expressly teach that the prior art composition comprises a mixture of cis-resveratrol, trans-resveratrol, and their glucosides. Even more, Ravagnan expressly teaches, "A quantitative analysis of the mixture of stilbenes, oligostilbenes and

stilbenoids obtained with the extraction according to the invention can be generally obtained by reverse-phase high-performance liquid chromatography (or with other separation techniques in liquid phase such as electrophoresis, thin layer chromatography (TLC) with UV detection, MS (Mass Spectrometry) or fluorescence detector." Moreover, it is well known in the art of herbal medicine that such compounds are useful in the treatment of liver disease, as evidenced by the teachings of Kimura. For instance, Kimura teaches an extract obtained from the roots of *Polygonum multiflorum* Thunb. comprising stilbenes and their glucoside components (piceid, resveratrol, and 2,3,5,4'-tetrahydroxy stilbebe-2-O-glucoside), which either reduced the elevation of GOT (aspartate transaminase) and GPT (alanine transaminase) levels in the serum of rats or inhibited lipid peroxidation induced by ADP and NADPH in rat liver microsomes. The cited reference teaches an extract product from the roots of *Polygonum multiflorum* Thunb. - - - which appears to be identical to the instantly claimed extract product since the same plant, the same plant parts, the same or essentially the same amounts of the same ingredients, the same solvents, the same experimental parameters and the same process steps are used in the making of the prior art composition as disclosed by Applicant; and, therefore it is considered to anticipate the instantly claimed extract product and pharmaceutical composition thereof Thus, absent evidence to the contrary, it would appear that an extract product and/or its pharmaceutical would inherently encompass the claimed beneficial functional effect to treat liver cirrhosis and have a reverse-phase HPLC elution profile as shown in Figure I.

Even if the claimed composition is not identical to the reference product-by-process with regard to some unidentified characteristics, the differences between that which is disclosed and that which is claimed are considered to be so slight that the product-by-process is likely to inherently possess the same characteristics of the instantly claimed product-by-process, particularly in view of the similar ingredients and similar process steps for which they have been shown to share. In the alternative, even if the claimed product-by-process differs from the reference product-by-process by either not being useful in the treatment of liver cirrhosis or not having a reverse phase-HPLC elution profile as shown in Figure 1, the instantly claimed invention still would have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. 103. For instance, it would have been obvious to one ordinary skill in the art to optimize the product-by-process taught by Ravagnan by modifying the elution profile of the reference composition such that it had a reverse-phase HPLC elution profile as shown in Figure 1 because Ravagnan taught all of the requisite ingredients, solvents, and experimental parameters to obtain an extract product from the roots of *Polygonum multiflorum* Thunb. comprising an immune-enhancing mixture of stilbenes, oligostilbenes and stilbenoids and their glucosides; as well as a method of determining the constituents contained therein by using reverse-phase high-performance liquid chromatography; and, Kimura taught the requisite compounds obtained from the roots of *Polygonum multiflorum* Thunb. that are useful in the reduction of liver enzymes known to be indicators of liver cirrhosis. At the time the invention was made, one of ordinary skill in the art would have been motivated and one would have had a

reasonable expectation of success to modify the reverse-phase HPLC elution profile such that it corresponded the elution profile as shown in Figure I because Ravagnan taught that a process for preparing an immune enhancing extract from the roots of *Polygonum multiflorum* Thunb. by subjecting the roots to a freezing treatment; subjecting the frozen product to an extraction with methanol and removing the methanol solution therefrom to obtain a methanol-extracted product comprising variously hydroxylated and/or glucosilated stilbene groups; and, determining the constituents contained therein by reverse-phase HPLC; and, Kimura suggested that root extracts of *Polygonum multiflorum* Thunb. comprising stilbene groups and their glucosides were useful in treating liver disease because they reduced levels of liver enzymes used to assess cirrhosis of the liver and inhibited liver peroxidation. Given the foregoing, the instantly claimed product-by-process would have been no more than a matter of routine optimization to provide a result-effect variable, which would have been well in the purview of either one of ordinary skill or the skilled artisan in the art practicing the invention at the time the invention was made.

Please note, "The patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." In *re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing unobvious difference between the claimed product and the prior art product. In *re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). The United States Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether on not Applicant's product-by-process differs and, if so, to what extent, from that discussed in the references. Therefore, with the showing of the references, the burden of establishing non-obviousness by objective evidence is shifted to Applicant.

Accordingly, the claimed invention as a whole was at least *prima facie* obvious, if not anticipated by the reference, especially in the absence of sufficient, clear, and convincing evidence to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michele Flood whose telephone number is 571-272-0964. The examiner can normally be reached on 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MICHELE FLOOD
PRIMARY EXAMINER

MCF
April 11, 2007

Michele Flood
Primary Examiner
Art Unit 1655